

# MODEL W1666/W1685 DUST COLLECTORS



## OWNER'S MANUAL

*(FOR MODELS MANUFACTURED SINCE 02/15)*

Phone: (360) 734-3482 • Online Technical Support: [tech-support@shopfox.biz](mailto:tech-support@shopfox.biz)

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WARNING: NO PORTION OF THIS MANUAL MAY BE REPRODUCED IN ANY SHAPE OR FORM WITHOUT

THE WRITTEN APPROVAL OF WOODSTOCK INTERNATIONAL, INC.



## **WARNING!**

This manual provides critical safety instructions on the proper setup, operation, maintenance, and service of this machine/tool. Save this document, refer to it often, and use it to instruct other operators.

Failure to read, understand and follow the instructions in this manual may result in fire or serious personal injury—including amputation, electrocution, or death.

The owner of this machine/tool is solely responsible for its safe use. This responsibility includes but is not limited to proper installation in a safe environment, personnel training and usage authorization, proper inspection and maintenance, manual availability and comprehension, application of safety devices, cutting/sanding/grinding tool integrity, and the usage of personal protective equipment.

The manufacturer will not be held liable for injury or property damage from negligence, improper training, machine modifications or misuse.



## **WARNING!**

Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- Lead from lead-based paints.
- Crystalline silica from bricks, cement and other masonry products.
- Arsenic and chromium from chemically-treated lumber.

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: Work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

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# INTRODUCTION

## Woodstock Technical Support

Woodstock International, Inc. is committed to customer satisfaction. Our intent with this manual is to include the basic information for safety, setup, operation, maintenance, and service of this product.

In the event that questions arise about your machine, please contact Woodstock International Technical Support at **(360) 734-3482** or send e-mail to: **[tech-support@shopfox.biz](mailto:tech-support@shopfox.biz)**. Our knowledgeable staff will help you troubleshoot problems or process warranty claims.

If you need the latest edition of this manual, you can download it from **<http://www.shopfox.biz>**.

If you have comments about this manual, please contact us at:

Woodstock International, Inc.  
Attn: Technical Documentation Manager  
P.O. Box 2309  
Bellingham, WA 98227  
Email: [manuals@woodstockint.com](mailto:manuals@woodstockint.com)

# MACHINE SPECIFICATIONS



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## MODEL W1666 SHOP FOX® 2 HP DUST COLLECTOR

### Product Dimensions

Weight..... 92 lbs.  
Width (side-to-side) x Depth (front-to-back) x Height..... 33-1/2 x 21-1/2 x 78 in.  
Footprint (Length x Width)..... 33-1/2 x 21-1/2 in.

### Shipping Dimensions

Type..... Cardboard Box  
Content..... Machine  
Weight..... 108 lbs.  
Length x Width x Height..... 36 x 23 x 23 in.  
Must Ship Upright..... Yes

### Electrical

Power Requirement..... 220V, Single-Phase, 60 Hz  
Prewired Voltage..... 220V  
Full-Load Current Rating..... 12A  
Minimum Circuit Size..... 15A  
Connection Type..... Cord & Plug  
Power Cord Included..... Yes  
Power Cord Length..... 10 ft.  
Power Cord Gauge..... 14 AWG  
Plug Included..... No  
Recommended Plug Type..... 6-15  
Switch Type..... Paddle Safety Switch w/Removable Key

### Motors

#### Main

Type..... TEFC Capacitor-Start Induction  
Horsepower..... 2 HP  
Phase..... Single-Phase  
Amps..... 12A  
Speed..... 3450 RPM  
Power Transfer ..... Direct Drive  
Bearings..... Sealed & Permanently Lubricated



## Main Specifications

### Operation

Dust Collector Type.....	Single-Stage
Approved Dust Types.....	Wood
Filter Type.....	Bag
Airflow Capacity.....	1550 CFM
Max Static Pressure (at 0 CFM).....	12.3 in.
Main Inlet Size.....	6 in.
Inlet Adapter Included.....	Yes
Number of Adapter Inlets.....	2
Adapter Inlet Size.....	4 in.
Machine Collection Capacity At One Time.....	3
Maximum Material Collection Capacity.....	5.4 cu. ft.
Filtration Rating.....	2.5 Micron

### Bag Information

Number of Upper Bags.....	1
Number of Lower Bags.....	1
Upper Bag Diameter.....	19 in.
Upper Bag Length.....	33 in.
Lower Bag Diameter.....	19 in.
Lower Bag Length.....	33 in.

### Impeller Information

Impeller Type.....	Radial Fin
Impeller Size.....	12 in.
Impeller Blade Thickness.....	3/32 in.

### Construction

Upper Bag.....	Fabric
Lower Bag.....	Plastic
Base.....	Steel Sheet Metal w/Casters
Caster.....	Four Plastic
Impeller.....	Steel
Paint Type/Finish.....	Powder Coated
Blower Housing.....	Steel Sheet Metal
Body.....	Steel Sheet Metal

### Other

Country of Origin .....	China
Warranty .....	2 Years
Approximate Assembly & Setup Time .....	45 Minutes
Serial Number Location .....	ID Label
ISO 9001 Factory .....	Yes
CSA, ETL, or UL Certified/Listed .....	No

### Features

Powder-Coated Finish  
Quick Release Band Clamp  
Includes Steel Base with Casters

# MACHINE SPECIFICATIONS



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## MODEL W1685 SHOP FOX® 1-1/2 HP DUST COLLECTOR

### Product Dimensions

Weight..... 90 lbs.  
Width (side-to-side) x Depth (front-to-back) x Height..... 33-1/2 x 21-1/4 x 78 in.  
Footprint (Length x Width)..... 33-1/2 x 21-1/4 in.

### Shipping Dimensions

Type..... Cardboard Box  
Content..... Machine  
Weight..... 107 lbs.  
Length x Width x Height..... 36 x 23 x 23 in.  
Must Ship Upright..... Yes

### Electrical

Power Requirement..... 110V, Single-Phase, 60 Hz  
Prewired Voltage..... 110V  
Full-Load Current Rating..... 16A  
Minimum Circuit Size..... 20A  
Connection Type..... Cord & Plug  
Power Cord Included..... Yes  
Power Cord Length..... 6 ft.  
Power Cord Gauge..... 14 AWG  
Plug Included..... Yes  
Recommended Plug Type..... 5-15  
Switch Type..... Push Button

### Motors

#### Main

Type..... TEFC Capacitor-Start Induction  
Horsepower..... 1.5 HP  
Phase..... Single-Phase  
Amps..... 16A  
Speed..... 3450 RPM  
Power Transfer ..... Direct Drive  
Bearings..... Sealed & Permanently Lubricated



## Main Specifications

### Operation

Dust Collector Type.....	Single-Stage
Approved Dust Types.....	Wood
Filter Type.....	Bag
Airflow Capacity.....	1280 CFM
Max Static Pressure (at 0 CFM).....	10.1 in.
Main Inlet Size.....	6 in.
Inlet Adapter Included.....	Yes
Number of Adapter Inlets.....	2
Adapter Inlet Size.....	4 in.
Machine Collection Capacity At One Time.....	2
Maximum Material Collection Capacity.....	5.4 cu. ft.
Filtration Rating.....	2.5 Micron

### Bag Information

Number of Upper Bags.....	1
Number of Lower Bags.....	1
Upper Bag Diameter.....	19 in.
Upper Bag Length.....	33 in.
Lower Bag Diameter.....	19 in.
Lower Bag Length.....	33 in.

### Impeller Information

Impeller Type.....	Radial Fin
Impeller Size.....	12 in.
Impeller Blade Thickness.....	1/8 in.

### Construction

Upper Bag.....	Fabric
Lower Bag.....	Plastic
Base.....	Steel Sheet Metal w/Casters
Caster.....	High Density Plastic
Impeller.....	Steel
Paint Type/Finish.....	Powder Coated
Blower Housing.....	Steel Sheet Metal
Body.....	Steel Sheet Metal

### Other

Country of Origin .....	China
Warranty .....	2 Years
Approximate Assembly & Setup Time .....	45 Minutes
Serial Number Location .....	ID Label Above Magnetic On/Off Switch
ISO 9001 Factory .....	Yes
CSA, ETL, or UL Certified/Listed .....	No

### Features

Large Capacity  
Powder-Coated Finish  
Includes Steel Base with Casters



# SAFETY

## For Your Own Safety, Read Manual Before Operating Machine

The purpose of safety symbols is to attract your attention to possible hazardous conditions. This manual uses a series of symbols and signal words intended to convey the level of importance of the safety messages. The progression of symbols is described below. Remember that safety messages by themselves do not eliminate danger and are not a substitute for proper accident prevention measures—this responsibility is ultimately up to the operator!



Indicates an imminently hazardous situation which, if not avoided, **WILL** result in death or serious injury.



Indicates a potentially hazardous situation which, if not avoided, **COULD** result in death or serious injury.



Indicates a potentially hazardous situation which, if not avoided, **MAY** result in minor or moderate injury.

### NOTICE

This symbol is used to alert the user to useful information about proper operation of the equipment or a situation that may cause damage to the machinery.

## Standard Machinery Safety Instructions

**OWNER'S MANUAL.** Read and understand this owner's manual **BEFORE** using machine.

**TRAINED OPERATORS ONLY.** Untrained operators have a higher risk of being hurt or killed. Only allow trained/supervised people to use this machine. When machine is not being used, disconnect power, remove switch keys, or lock-out machine to prevent unauthorized use—especially around children. Make workshop kid proof!

**DANGEROUS ENVIRONMENTS.** Do not use machinery in areas that are wet, cluttered, or have poor lighting. Operating machinery in these areas greatly increases the risk of accidents and injury.

**MENTAL ALERTNESS REQUIRED.** Full mental alertness is required for safe operation of machinery. Never operate under the influence of drugs or alcohol, when tired, or when distracted.

**ELECTRICAL EQUIPMENT INJURY RISKS.** You can be shocked, burned, or killed by touching live electrical components or improperly grounded machinery. To reduce this risk, only allow an electrician or qualified service personnel to do electrical installation or repair work, and always disconnect power before accessing or exposing electrical equipment.

**DISCONNECT POWER FIRST.** Always disconnect machine from power supply **BEFORE** making adjustments, changing tooling, or servicing machine. This eliminates the risk of injury from unintended startup or contact with live electrical components.

**EYE PROTECTION.** Always wear ANSI-approved safety glasses or a face shield when operating or observing machinery to reduce the risk of eye injury or blindness from flying particles. Everyday eyeglasses are not approved safety glasses.

**WEARING PROPER APPAREL.** Do not wear clothing, apparel, or jewelry that can become entangled in moving parts. Always tie back or cover long hair. Wear non-slip footwear to avoid accidental slips, which could cause loss of workpiece control.

**HAZARDOUS DUST.** Dust created while using machinery may cause cancer, birth defects, or long-term respiratory damage. Be aware of dust hazards associated with each workpiece material, and always wear a NIOSH-approved respirator to reduce your risk.

**HEARING PROTECTION.** Always wear hearing protection when operating or observing loud machinery. Extended exposure to this noise without hearing protection can cause permanent hearing loss.

**REMOVE ADJUSTING TOOLS.** Tools left on machinery can become dangerous projectiles upon startup. Never leave chuck keys, wrenches, or any other tools on machine. Always verify removal before starting!

**INTENDED USAGE.** Only use machine for its intended purpose—never make modifications without prior approval from Woodstock International. Modifying machine or using it differently than intended will void the warranty and may result in malfunction or mechanical failure that leads to serious personal injury or death!

**AWKWARD POSITIONS.** Keep proper footing and balance at all times when operating machine. Do not overreach! Avoid awkward hand positions that make workpiece control difficult or increase the risk of accidental injury.

**CHILDREN & BYSTANDERS.** Keep children and bystanders at a safe distance from the work area. Stop using machine if they become a distraction.

**GUARDS & COVERS.** Guards and covers reduce accidental contact with moving parts or flying debris—make sure they are properly installed, undamaged, and working correctly.

**FORCING MACHINERY.** Do not force machine. It will do the job safer and better at the rate for which it was designed.

**NEVER STAND ON MACHINE.** Serious injury may occur if machine is tipped or if the cutting tool is unintentionally contacted.

**STABLE MACHINE.** Unexpected movement during operation greatly increases risk of injury or loss of control. Before starting, verify machine is stable and mobile base (if used) is locked.

**USE RECOMMENDED ACCESSORIES.** Consult this owner's manual or the manufacturer for recommended accessories. Using improper accessories will increase risk of serious injury.

**UNATTENDED OPERATION.** To reduce the risk of accidental injury, turn machine **OFF** and ensure all moving parts completely stop before walking away. Never leave machine running while unattended.

**MAINTAIN WITH CARE.** Follow all maintenance instructions and lubrication schedules to keep machine in good working condition. A machine that is improperly maintained could malfunction, leading to serious personal injury or death.

**CHECK DAMAGED PARTS.** Regularly inspect machine for any condition that may affect safe operation. Immediately repair or replace damaged or mis-adjusted parts before operating machine.

**MAINTAIN POWER CORDS.** When disconnecting cord-connected machines from power, grab and pull the plug—NOT the cord. Pulling the cord may damage the wires inside, resulting in a short. Do not handle cord/plug with wet hands. Avoid cord damage by keeping it away from heated surfaces, high traffic areas, harsh chemicals, and wet/damp locations.

**EXPERIENCING DIFFICULTIES.** If at any time you experience difficulties performing the intended operation, stop using the machine! Contact Technical Support at (360) 734-3482.

## Additional Safety for Dust Collectors

**INTENDED USE.** This dust collector is only intended for collecting wood dust and chips from woodworking machines. DO NOT use this dust collector to collect metal, dirt, pebbles, drywall, asbestos, lead paint, silica, liquids, aerosols, or any flammable, combustible, or hazardous materials.

**HAZARDOUS DUST.** Dust created while using machinery may cause cancer, birth defects, or long-term respiratory damage. Be aware of dust hazards associated with each workpiece material, and always wear a NIOSH-approved respirator to reduce your risk.

**DUST ALLERGIES.** Dust from certain woods may cause an allergic reaction in people and animals. Make sure you know what type of wood dust you will be exposed to in case there is a possibility of an allergic reaction.

**WEAR RESPIRATOR.** Fine dust that is too small to be caught in the filter will be blown into the ambient air during operation. Always wear a NIOSH approved respirator during operation and for a short time after to reduce your risk of permanent respiratory damage.

**EMPTYING DUST.** When emptying dust from the collection container, wear a respirator and safety glasses. Empty dust away from ignition sources and into an approved container.

**DISCONNECTING POWER SUPPLY.** Turn the switch OFF, disconnect the dust collector from the power supply, and allow the impeller to come to a complete stop before leaving the machine unattended or doing any service, cleaning, maintenance, or adjustments.

**REGULAR CLEANING.** Regularly check/empty the collection bags or drum to avoid the buildup of fine dust that can increase the risk of fire. Make sure to regularly clean the surrounding area where the machine is operated—excessive dust buildup on overhead lights, heaters, electrical panels, or other heat sources will increase the risk of fire.

**SUSPENDED DUST PARTICLES AND IGNITION SOURCES.** DO NOT operate the dust collector in areas where explosion risks are high. Areas of high risk include, but are not limited to, areas near pilot lights, open flames, or other ignition sources.

**FIRE SUPPRESSION.** Only operate dust collector in locations that contain a fire suppression system or have a fire extinguisher nearby.

**IMPELLER HAZARDS.** DO NOT place your hands or tools near the open inlet during operation for any reason. The powerful suction could easily pull them into the impeller, which will cause serious personal injury or damage to the machine. Always keep small animals and children away from open dust collection inlets.

**AVOIDING SPARKS.** DO NOT allow steel or rocks to strike the impeller—this may produce sparks. Sparks can smolder in wood dust for a long time before a fire is detected. If you accidentally cut into wood containing tramp metal (nails, staples, spikes, etc.), immediately turn OFF the dust collector, disconnect it from power, and wait for the impeller to stop—then empty the collection container into an approved airtight metal container.

**OPERATING LOCATION.** To reduce respiratory exposure to fine dust, locate permanently installed dust collectors away from the working area, or in another room that is equipped with a smoke detector. DO NOT operate the dust collector in rainy or wet locations—exposure to water may create an shock hazard or decrease the life of the machine.

**STATIC ELECTRICITY.** Plastic dust lines generate high amounts of static electricity as dust chips pass through them. Although rare, sparks caused by static electricity can cause explosions or fire. To reduce this risk, make sure all dust lines are thoroughly grounded by using a grounding wire.

# ELECTRICAL

## Circuit Requirements

This machine must be connected to the correct size and type of power supply circuit, or fire or electrical damage may occur. Read through this section to determine if an adequate power supply circuit is available. If a correct circuit is not available, a qualified electrician **MUST** install one before you can connect the machine to power.

A power supply circuit includes all electrical equipment between the breaker box or fuse panel in the building and the machine. The power supply circuit used for this machine must be sized to safely handle the full-load current drawn from the machine for an extended period of time. (If this machine is connected to a circuit protected by fuses, use a time delay fuse marked D.)

### Full-Load Current Rating

The full-load current rating is the amperage a machine draws at 100% of the rated output power. On machines with multiple motors, this is the amperage drawn by the largest motor or sum of all motors and electrical devices that might operate at one time during normal operations.

**W1666 Full-Load Current Rating at 220V..... 12 Amps**

**W1685 Full-Load Current Rating at 110V ..... 16 Amps**

### W1666 Circuit Requirements for 220V

This machine is prewired to operate on a 220V power supply circuit that has a verified ground and meets the following requirements:

**Circuit Type ..... 220V, 60 Hz, Single-Phase**

**Circuit Size ..... 15 Amps**

**Plug/Receptacle ..... NEMA 6-15**

### W1685 Circuit Requirements for 110V

This machine is prewired to operate on a 110V power supply circuit that has a verified ground and meets the following requirements:

**Circuit Type ..... 110V, 60 Hz, Single-Phase**

**Circuit Size ..... 20 Amps**

**Plug/Receptacle ..... NEMA 5-20**

## ⚠ WARNING

The machine must be properly set up before it is safe to operate. **DO NOT** connect this machine to the power source until instructed to do so later in this manual.

## ⚠ WARNING



Incorrectly wiring or grounding this machine can cause electrocution, fire, or machine damage. To reduce this risk, only an electrician or qualified service personnel should do any required electrical work on this machine.

## NOTICE

The circuit requirements listed in this manual apply to a dedicated circuit—where only one machine will be running at a time. If this machine will be connected to a shared circuit where multiple machines will be running at the same time, consult with an electrician to ensure that the circuit is properly sized for safe operation.

# Grounding Requirements

This machine **MUST** be grounded. In the event of certain types of malfunctions or breakdowns, grounding provides a path of least resistance for electric current to travel—in order to reduce the risk of electric shock.

Improper connection of the equipment-grounding wire will increase the risk of electric shock. The wire with green insulation (with/without yellow stripes) is the equipment-grounding wire. If repair or replacement of the power cord or plug is necessary, do not connect the equipment-grounding wire to a live (current carrying) terminal.

Check with a qualified electrician or service personnel if you do not understand these grounding requirements, or if you are in doubt about whether the tool is properly grounded. If you ever notice that a cord or plug is damaged or worn, disconnect it from power, and immediately replace it with a new one.

## For W1666 220V Connection

A NEMA 6-15 plug has a grounding prong that must be attached to the equipment-grounding wire inside the included power cord. The plug must only be inserted into a matching receptacle (see **Figure 1**) that is properly installed and grounded in accordance with all local codes.

## For W1685 110V Connection

A NEMA 5-15 plug has a grounding prong that must be attached to the equipment-grounding wire inside the included power cord. The plug must only be inserted into a matching receptacle (see **Figure 2**) that is properly installed and grounded in accordance with all local codes.

# Extension Cords

We do not recommend using an extension cord with this machine. Extension cords cause voltage drop, which may damage electrical components and shorten motor life. Voltage drop increases with longer extension cords and smaller gauge sizes (higher gauge numbers indicate smaller sizes).

Any extension cord used with this machine must contain a ground wire, match the required plug and receptacle, and meet the following requirements:

Minimum Gauge Size ..... 12 AWG  
Maximum Length (Shorter is Better) ..... 50 ft.

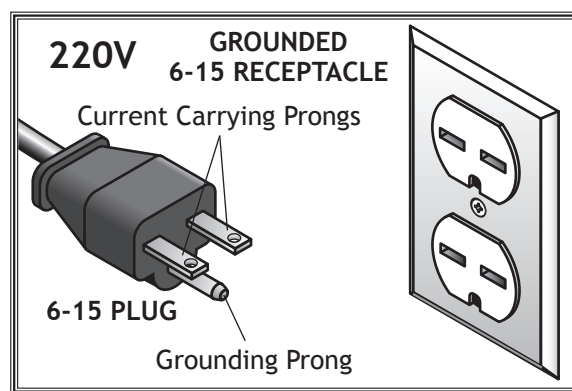


Figure 1. NEMA 6-15 plug & receptacle.

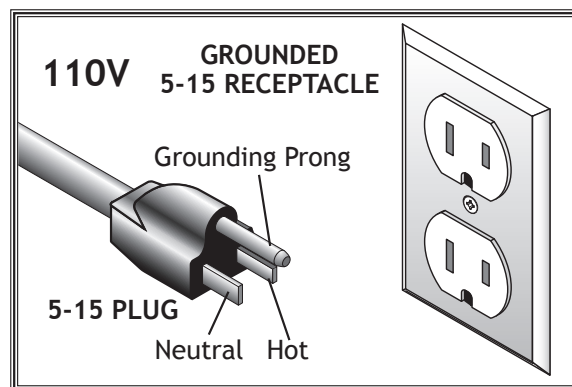
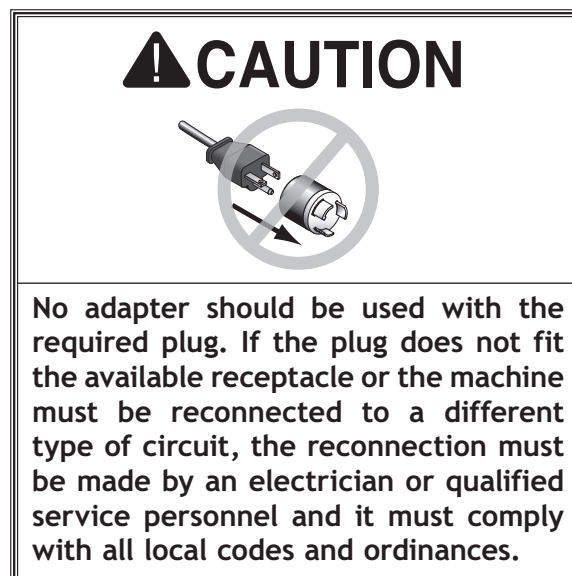


Figure 2. NEMA 5-15 plug & receptacle.



# SETUP

## Unpacking

This machine has been carefully packaged for safe transportation. If you notice the machine has been damaged during shipping, please contact your authorized Shop Fox dealer immediately.

## Inventory

The following is a description of the main components shipped with the Model W1666/W1685. Lay the components out to inventory them.

**Note:** If you can't find an item on this list, check the mounting location on the machine or examine the packaging materials carefully. Occasionally we pre-install certain components for safer shipping.

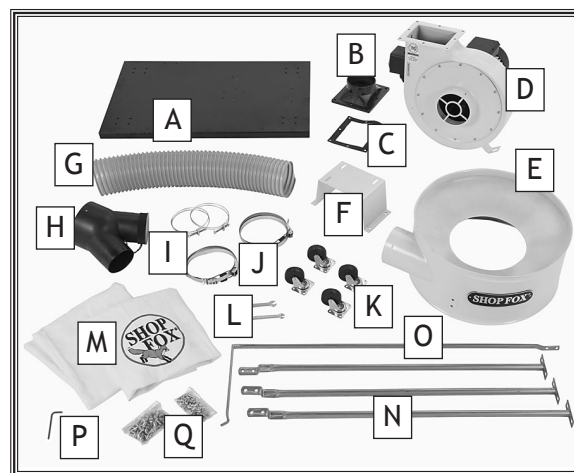
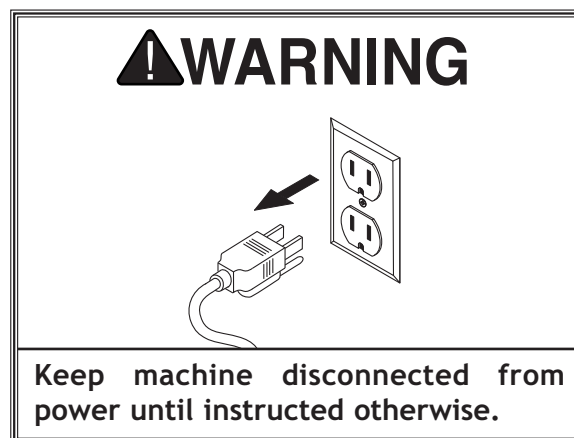


Figure 3. Shipping inventory.

### Shipping Inventory (Figure 3):

	Qty
A. Base Plate .....	1
B. Outlet Flange 5" .....	1
C. Outlet Gasket .....	1
D. Impeller/Motor Assembly.....	1
E. Separator .....	1
F. Motor Mount.....	1
G. Transfer Hose 5" .....	1
H. Inlet Y-Connector 6" x (2) 4".....	1
I. Hose Clamps 5" .....	2
J. Bag Clamps .....	2
K. Swivel Casters.....	4
L. Wrenches, 8/10mm & 11/13mm Open Ends ...	1 Each
M. Bags, Upper & Lower .....	1 Each
N. Separator Supports.....	3
O. Upper Bag Hanger .....	1
P. Hex Wrench 5mm.....	1
Q. Hardware Bags for W1666	
– Hex Bolts M8-1.25 x 16.....	26
– Hex Bolts M8-1.25 x 25.....	4
– Flat Washers 8mm.....	34
– Hex Nuts M8-1.25 .....	4
– Phillips Head Screws M6-1 x 10 .....	16
– Flat Washers 6mm.....	16
– Hex Nuts M6-1 .....	16



Q. Hardware Bags for W1685	
– Hex Bolts M8-1.25 x 16.....	18
– Hex Bolts M8-1.25 x 25.....	4
– Flat Washers 8mm.....	26
– Hex Nuts M8-1.25 .....	4
– Phillips Head Screws M6-1 x 10 ...	16
– Hex Bolts M6-1 x 20 .....	6
– Flat Washers 6mm.....	28
– Hex Nuts M6-1 .....	22

# Assembly

Select an assembly area that is free from clutter and well lighted.

Tools Needed	Qty
Phillips Screwdriver #2.....	1
Wrench or Socket 10mm.....	1
Wrench or Socket 13mm.....	2

To assemble the dust collector, do these steps:

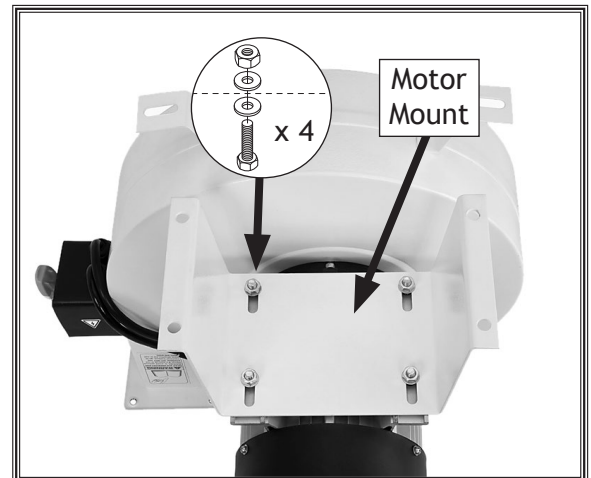
1. Install four swivel casters to base plate with (16) M6-1 x 10 Phillips head screws, (16) 6mm flat washers, and (16) M6-1 hex nuts, as shown in **Figure 4**.
2. With assistance from another person, turn impeller/ motor assembly upside down and attach motor mount as shown in **Figure 5**, with (4) M8-1.25 x 25 hex bolts, (8) 8mm flat washers, and (4) M8-1.25 hex nuts.

**Note:** Finger tighten these fasteners for now so that mount can be adjusted in a later step.

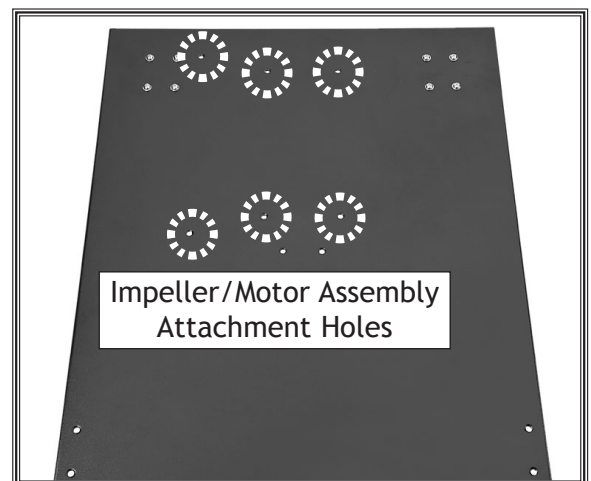
3. With assistance from another person, turn impeller/ motor assembly right side up and position it over attachment holes on base plate (see **Figure 6**).



**Figure 4.** Swivel caster attached to base plate.



**Figure 5.** Motor mount attached to motor.



**Figure 6.** Location of impeller/ motor assembly attachment holes.

4. Attach impeller/motor assembly to base plate with (6) M8-1.25 x 16 hex bolts and (6) 8mm flat washers (see Figure 7).

**Note:** Adjust the position of motor mount to align holes, then fully tighten fasteners installed in Step 2 that secure mount to impeller/motor assembly.

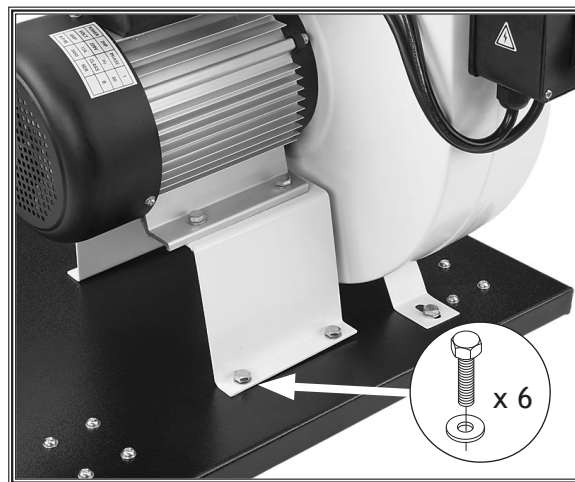


Figure 7. Impeller/motor assembly attached to base plate.

5. Place outlet gasket on top of outlet port, as shown in Figure 8.

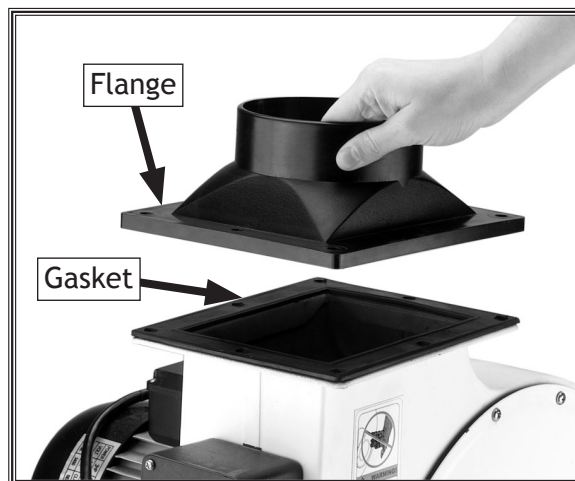


Figure 8. Outlet gasket and flange.

6. **Model W1666:** Place outlet flange on top of gasket and secure it with (8) M8-1.25 x 16 hex bolts and (8) 8mm flat washers (see Figure 9).

**Model W1685:** Place outlet flange on top of gasket and secure it with (8) M6-1 x 20 hex bolts and (8) 6mm flat washers.

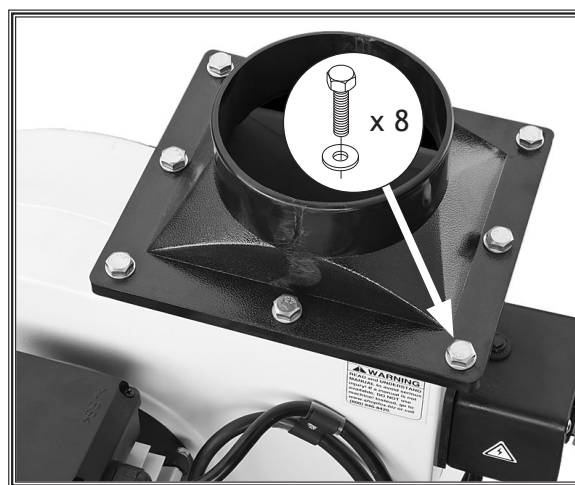


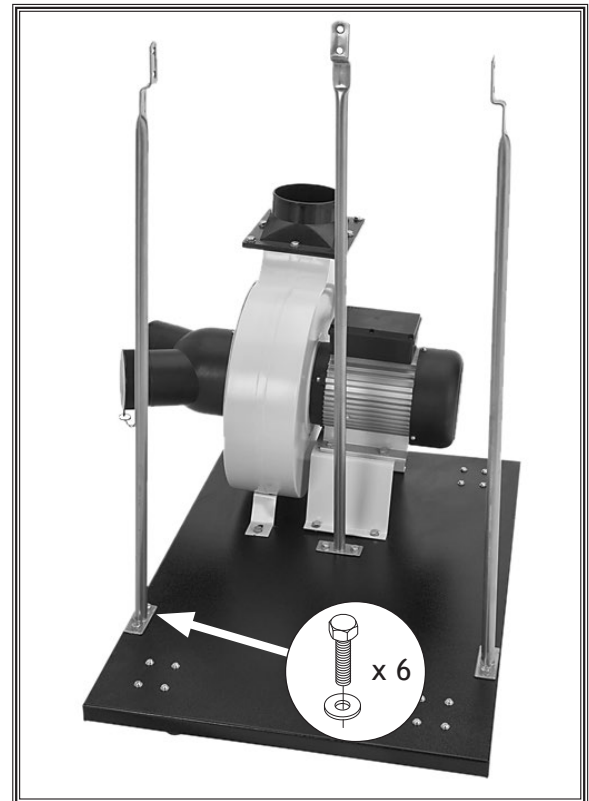
Figure 9. Outlet flange attached.



7. Position each of the three separator supports over the base plate attachment holes shown in **Figure 10**, with top bend facing inward, then secure them with (6) M8-1.25 x 16 hex bolts and (6) 8mm flat washers (see **Figure 11**).



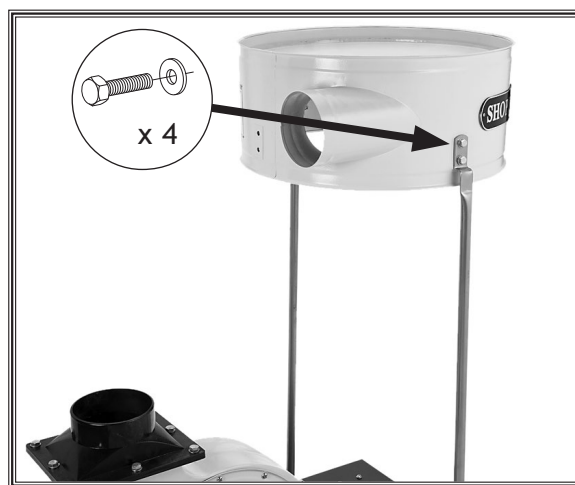
**Figure 10.** Locations of separator support attachment holes in base plate.



**Figure 11.** Separator supports attached to base plate.

8. With assistance from another person, attach separator to the front and rear supports, as shown in **Figure 12**, with (4) M8-1.25 x 16 hex bolts and (4) 8mm flat washers.

**Note:** Do not attach separator to side support until next step.



**Figure 12.** Separator attached to front and rear supports.

9. Attach side separator support and upper bag hanger to separator with (2) M8-1.25 x 16 hex bolts and (2) 8mm flat washers, as shown in **Figure 13**.



**Figure 13.** Side support and upper bag hanger attached to separator.

10. Slide a hose clamp over each end of transfer hose, then slide hose ends over impeller outlet flange port and separator inlet port (see **Figure 14**).

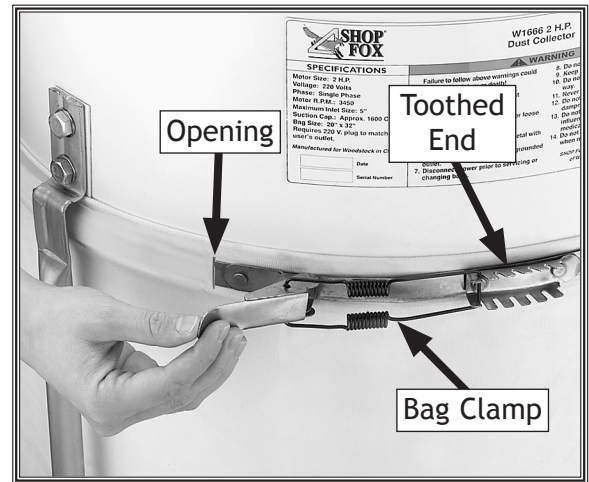
**Note:** Slide ends as far as possible over each port to ensure a tight fit.

11. Tighten hose clamps to secure transfer hose.



**Figure 14.** Transfer hose attached.

12. Insert toothed-end of each bag clamp into opening of bag rim, then slide it completely around rim cavity to meet other end (see **Figure 15**).



**Figure 15.** Securing bag to separator.

**Note:** The upper bag has the **SHOP FOX®** logo on it and the lower bag is plain.

13. Hang upper bag, as shown in **Figure 16**, and attach bag rim to the separator in the manner shown in **Figure 15**.
14. Attach lower bag to separator in a similar manner.



**Figure 16.** Hanging upper bag.

15. Attach inlet Y-connector to impeller cover with pre-installed Phillips head screw, as shown in **Figure 17**.



**Figure 17.** Attaching inlet Y-connector.

## Test Run

Once the assembly is complete, test run your machine to make sure it runs properly and is ready for regular operation.

The test run consists of verifying the following: 1) The motor powers up and runs correctly, and 2) the safety disabling mechanism on the switch works correctly.

If, during the test run, you cannot easily locate the source of an unusual noise or vibration, stop using the machine immediately, then review **Troubleshooting on Page 34**. If you still cannot remedy a problem, contact our Tech Support at (360) 734-3482 for assistance.

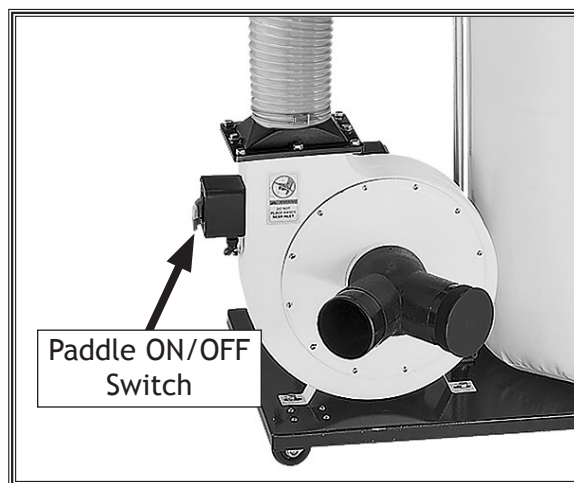
To test run the machine, do these steps:

1. Make sure you understand the safety instructions at the beginning of the manual, and verify that the machine is setup properly.
2. Ensure all tools and objects used during setup are cleared away from the machine.
3. Make sure the paddle ON/OFF switch (see **Figure 18**) is pushed down—this ensures the machine will not unexpectedly start when connected to power.
4. Connect the machine to the power source.
5. Verify that the machine is operating correctly by lifting the paddle ON/OFF switch up and turning the machine **ON**. The machine should run smoothly with little or no vibration or rubbing noises.
  - Investigate and correct strange or unusual noises or vibrations before operating the machine further. Always disconnect the machine from power when investigating or correcting potential problems.
6. Turn the machine **OFF**.
7. Remove the switch disabling key, as shown in **Figure 19**).
8. Try to start the machine with the paddle switch—the machine should not start.
  - If the machine starts, immediately stop the machine. The switch disabling feature is not working correctly. Call Tech Support for help.

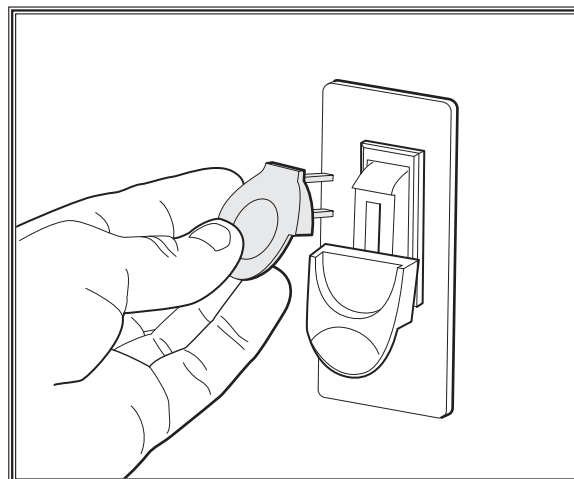
### WARNING



Projectiles thrown from the machine could cause serious eye injury. Wear safety glasses to reduce the risk of injury.



**Figure 18.** Paddle ON/OFF switch location.



**Figure 19.** Removing switch key from paddle switch.

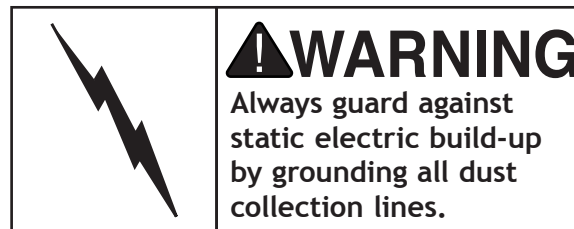
# DESIGNING THE SYSTEM

## General

This dust collector can be operated as either a stationary, central dust collector or a mobile unit. There are advantages and disadvantages to both setups. The advantage of the mobile system is eliminating the cost of many ducts and fittings. On the other hand, the stationary system is more efficient and customizable.

If using this dust collector as a stationary system, put the dust collector in an out-of-the way location such as a corner or separate room. The dust collector is capable of collecting dust from up to two machines running simultaneously. Woodstock offers a complete line of dust collection accessories for setting up a stationary, central dust collector system. Additionally, Woodstock offers a complete guide book entitled **Dust Collection Basics** (refer to **Page 30** for additional details).

Whatever system you choose, always make sure there are no open flames or pilot lights in the same room as the dust collector. There is a risk of explosion if dust is dispersed into the air.



## Duct Material

You have many choices regarding main line and branch line duct material. For best results, use metal duct for the main line and branch lines, then use short lengths of flexible hose to connect each machine to the branch lines.

Plastic duct is also a popular material for home shops. However, be aware that there is a fire or explosion hazard if plastic duct material is used for dust collection without being grounded against static electrical charge build-up. This topic will be discussed later in this section. Another problem with using plastic is that it is less efficient per foot than metal.

## Plastic Duct

The popularity of plastic duct is due to the fact that it is an economical and readily available product. It is also simple to assemble and easily sealed against air loss. The primary disadvantage of plastic duct for dust collection is the inherent danger of static electrical build-up.

## Metal Duct

Advantages of metal duct is its conductivity, efficiency, and that it does not contribute to static electrical charge build-up. However, static charges are still produced when dust particles strike other dust particles as they move through the duct. Since metal duct is a conductor, it can be grounded quite easily to dissipate any static electrical charges.

There are a number of options when it comes to metal duct, but metal duct that is specially manufactured for dust collection is the best choice. When selecting your metal duct, choose high quality metal duct with smooth welded internal seams that will minimize airflow resistance. This type of duct usually connects to other ducts or elbows with a simple, self-sealing clamp, is very quick and easy to assemble, and can be readily dismantled and re-installed. This is especially important if you ever need to change things around in your shop or add more tools.

Avoid inferior metal duct that requires you to cut it to length and snap it together. This type of duct is time consuming to install because it requires you to seal all the seams with silicone and screw the components on the ends with sheet metal screws. Another disadvantage is the rough internal seams and crimped ends that unavoidably increase static pressure loss.

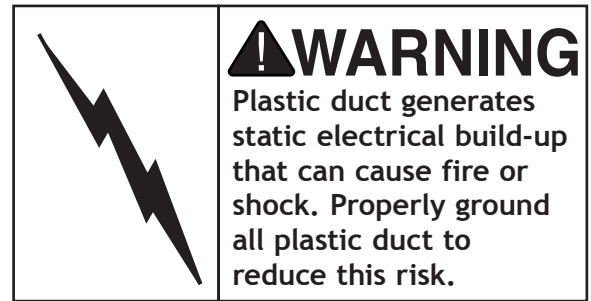


Figure 20. Examples of plastic duct components (Model W1055).

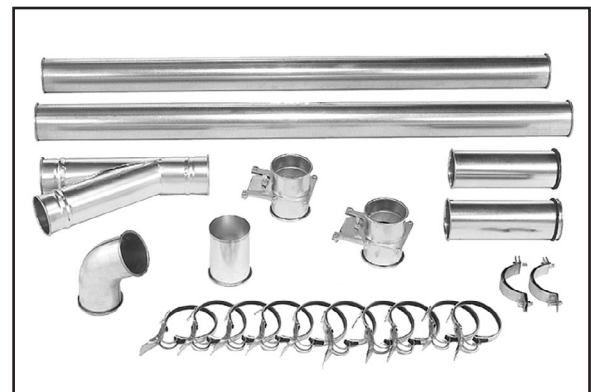


Figure 21. Examples of metal duct components.



## Flexible Duct

Flexible hose is generally used for short runs, small shops and at rigid duct-to-tool connections. There are many different types of flex hose on the market today. These are manufactured from materials such as polyethylene, PVC, cloth hose dipped in rubber and even metal, including steel and aluminum.

The superior choice here is metal flex hose that is designed to be flexible, yet be as smooth as possible to reduce static pressure loss.

There are also many kinds of pure plastic flexible hose, such as non-perforated drainage type hose and dryer vent hose. Drainage type hose, while being economical, does not quite have the flexibility required for dust collection. The inside of the duct is also deeply corrugated and can increase the static pressure loss by as much as 50% over smooth wall duct. Dryer vent hose, while being completely flexible, is non-resistant to abrasion and has a tendency to collapse in a negative pressure system. We DO NOT recommend using dryer vent hose in your dust collection system.

If using flex-hose, you should choose one of the many types that are designed specifically for the movement of solid particles, i.e. dust, grains, and plastics. However, the cost of specifically designed flexible duct can vary greatly. Woodstock offers polyethylene hose, which is well suited for the removal of particulate matter, especially sawdust, since it is durable and completely flexible. Polyethylene is also very economical and available in a wide variety of diameters and lengths for most applications.

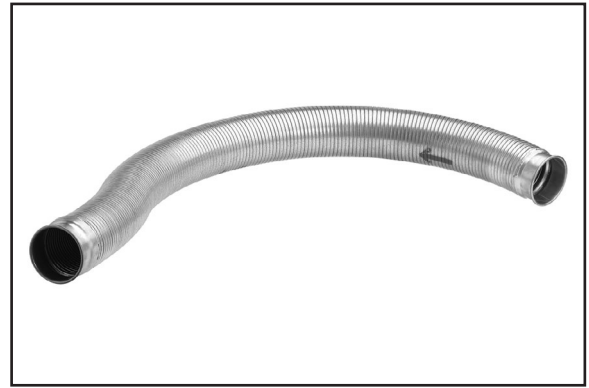


Figure 22. Example of flexible metal duct.

# System Grounding

Since plastic hose is abundant, relatively inexpensive, easily assembled and air tight, it is a very popular material for conveying dust from woodworking machines to the dust collector. We recommend using flexible hose (flex-hose) to connect the woodworking machine to the dust collector. However, plastic flex-hose and plastic duct are an insulator, and dust particles moving against the walls of the plastic duct create a static electrical build up. This charge will build until it discharges to a ground. If a grounding medium is not available to prevent static electrical build up, the electrical charge will arc to the nearest grounded source. This electrical discharge may cause an explosion and subsequent fire inside the system.

To protect against static electrical build up inside a non-conducting duct, a bare copper wire should be placed inside the duct along its length and grounded to the dust collector. You must also confirm that the dust collector is continuously grounded through the electrical circuit to the electric service panel.

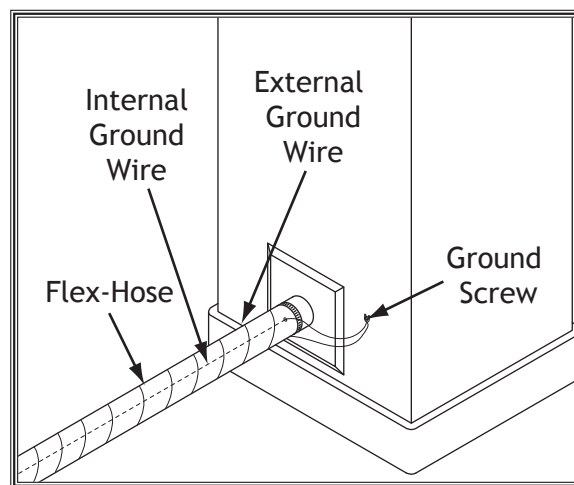
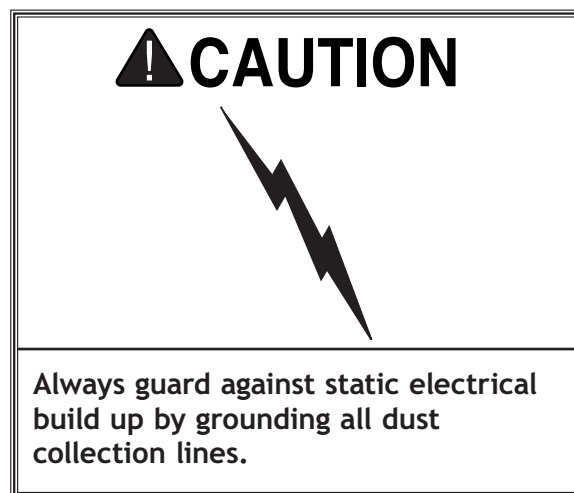
If you connect the dust collector to more than one machine by way of a non-conducting branching duct system and blast gates, the system must still be grounded as mentioned above. We recommend inserting a continuous bare copper ground wire inside the entire duct system (see **Figure 23**) and attaching the wire to each grounded woodworking machine and dust collector.

Be sure that you extend the bare copper wire down all branches of the system. Do not forget to connect the wires to each other with wire nuts when two branches meet at a “Y” or “T” connection.

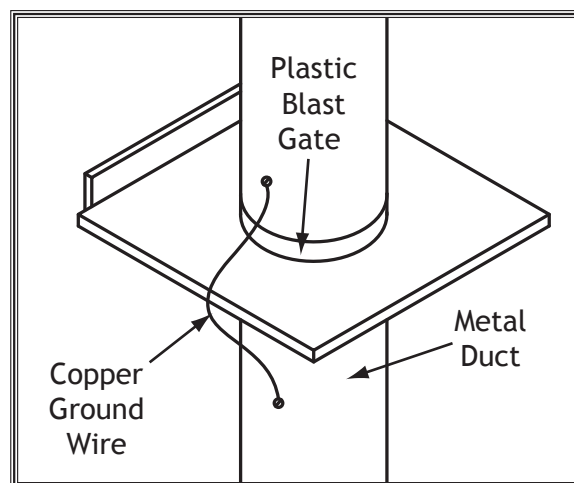
Ensure that the entire system is grounded. If using plastic blast gates to direct air flow, the grounding wire must be jumped (see **Figure 24**) around the blast gate without interruption to the grounding system.

We also recommend wrapping the outside of all plastic ducts with bare copper wire to ground the outside of the system against static electrical build up. Wire connections at Y’s and T’s should be made with wire nuts.

Attach the bare ground wire to each stationary woodworking machine and attach to the dust collector frame with a ground screw, as shown in **Figure 23**. Ensure that each machine is continuously grounded to the grounding terminal in your electric service panel.



**Figure 23.** Flex-hose grounded to machine.



**Figure 24.** Ground jumper wire when using plastic blast gates and metal duct.



# System Design

## Decide Who Will Design

For most small-to-medium sized shops, you can design and build the dust collection system yourself without hiring engineers or consultants. We have included some basic information here to get you started on a basic design.

If you have a large shop or plan to design a complicated system, we recommend doing additional research beyond this manual or seeking the help of an expert.

## Sketch Your Shop Layout

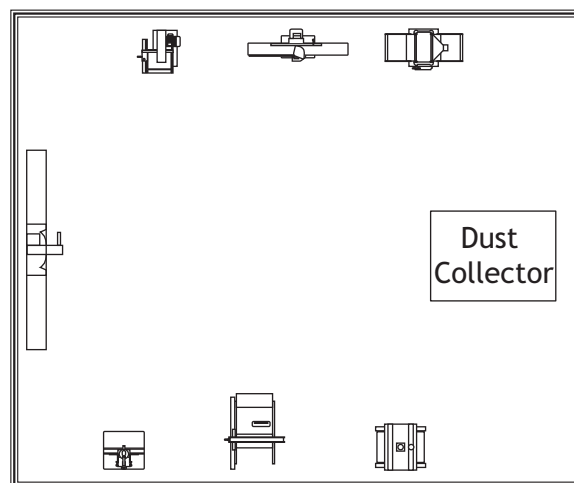
When designing a successful dust collection system, planning is the most important step. In this step, sketch a basic layout of your shop, including space requirements of different machines.

Your sketch only needs the basic details of the shop layout, similar to **Figure 25**, including all your current/planned machines and your planned placement of the dust collector.

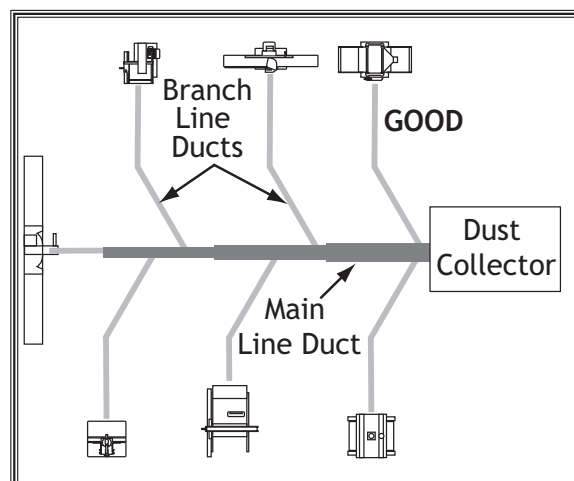
## Sketch a Duct Layout

For the next step, sketch how you will connect your machines to the dust collector. Consider these general guidelines for an efficient system:

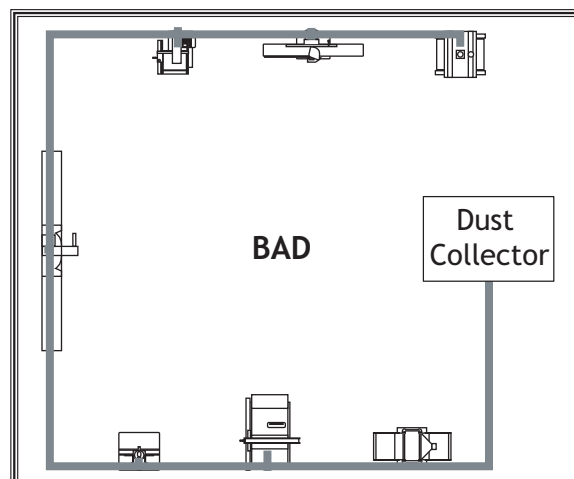
1. Machines that produce the most saw dust should be placed nearest to the dust collector (i.e. planers and sanders).
2. Ideally, you should design the duct system to have the shortest possible main line and secondary branch ducts. See **Figures 26-27** for ideas of efficient versus inefficient duct layouts.



**Figure 25.** Example sketch of basic shop layout.



**Figure 26.** Example sketch of an efficient duct layout.



**Figure 27.** Example sketch of an inefficient duct layout.

3. Directional changes should be kept to a minimum. The more directional change fittings you use directly increases the overall resistance to airflow.
4. Gradual directional changes are more efficient than sudden directional changes (i.e. use the largest corner radius possible when changing hose or pipe direction).
5. Each individual branch line should have a blast gate immediately after the branch to control suction from one machine to another.
6. The simpler the system, the more efficient and less costly it will be.

### Determine Required CFMs

Since each machine produces a different amount of sawdust, the requirements for the minimum amount of CFM to move that sawdust is unique to the machine (for example, a planer produces more sawdust than a table saw). Knowing this required CFM is important to gauging which size of duct to use.

Refer to **Figure 28** for a close estimation of the airflow each machine requires. Keep in mind that machines that generate the most sawdust should be placed closest to the dust collector. If the machine has multiple dust ports, the total CFM required is the sum of all ports.

If the machine does not have a built-in dust port, use the table in **Figure 29** to determine which size of dust port to install.

Machine Dust Port Size	Approximate Required CFM
2"	98
2.5"	150
3"	220
4"	395
5"	614
6"	884
7"	1203
8"	1570
9"	1990
10"	2456

**Figure 28.** Approximate required airflow for machines, based on dust port size.

Machine	Average Dust Port Size
Table Saw .....	4"
Miter/Radial-Arm Saw.....	2"
Jointer (6" and smaller) .....	4"
Jointer (8"-12") .....	5"
Thickness Planer (13" and smaller) ....	4"
Thickness Planer (14"-20").....	6"
Shaper .....	4"
Router (mounted to table) .....	2"
Bandsaw .....	4"
Lathe.....	4"
Disc Sander (12" and smaller).....	2"
Disc Sander (13-18") .....	4"
Belt Sander (6" and smaller) .....	2"
Belt Sander (7"-9") .....	3"
Edge Sander (6" x 80" and smaller) ....	4"
Edge Sander (6" x 80" and larger) .....	5"
Drum Sander (24" and smaller) .....	2 x 4"
Drum Sander (24" and larger).....	4 x 4"
Widebelt Sander (18" and smaller).....	5"
Widebelt Sander (24"-37" single head) .....	2 x 6"
Widebelt Sander (24"-51" double head) .....	5 x 4"

**Figure 29.** Dust port size and quantity per average machine.

Write the required CFM for each machine on your sketch, as shown in **Figure 30**.

## Determining Main Line Duct Size

The general rule of thumb for a main line duct is that the velocity of the airflow must not fall below 3500 FPM.

For small/medium sized shops, using the inlet size of the dust collector as the main line duct size will usually keep the air velocity above 3500 FPM and, depending on your system, will allow you to keep multiple branches open at one time.

Mark your drawing, as shown in **Figure 31**, but using the inlet size for your dust collector as the main line.

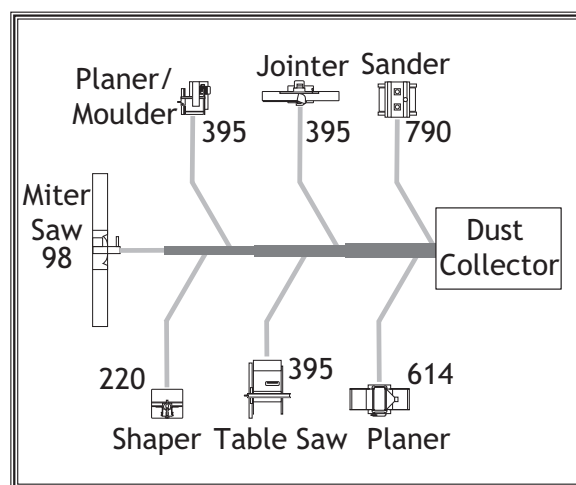
## Determining Branch Line Duct Size

The general rule of thumb for a branch line duct is that the velocity of the airflow must not fall below 4000 FPM.

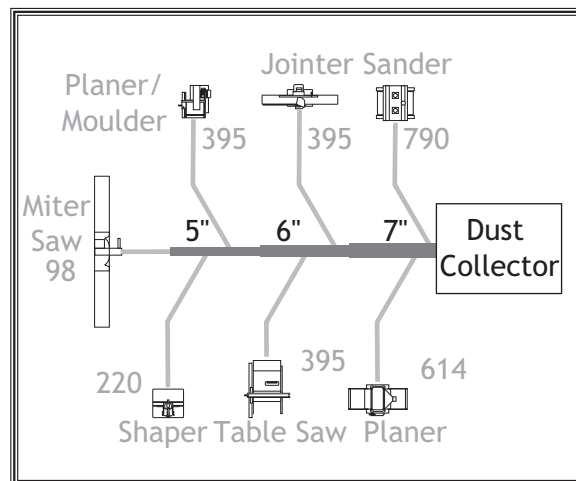
For small/medium sized shops, using the dust port size from the machine as the branch line duct size will achieve the correct velocity in most applications. However, if the dust port on the machine is smaller than 4", make the branch line 4" and neck the line down right before the dust port.

**Note:** Systems with powerful dust collectors work better if multiple blast gates are left open. This also allows you to run two machines at once. Experiment with different combinations of blast gates open/closed to find the best results for your system.

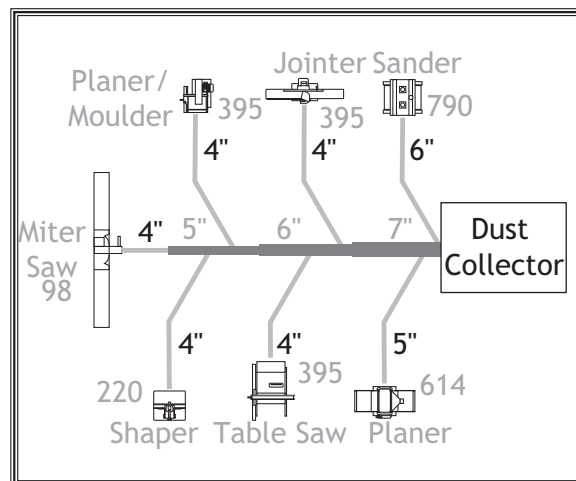
Write your determined branch line sizes on your drawing, as shown in **Figure 32**.



**Figure 30.** CFM requirements labeled for each machine.



**Figure 31.** Main line size labeled on sketch.



**Figure 32.** Branch line duct sizes labeled.

If two machines will connect to the same branch line and both will operate at the same time, then add the required CFM for each machine together and find the closest total CFM in the table in **Figure 33** to determine the correct branch size.

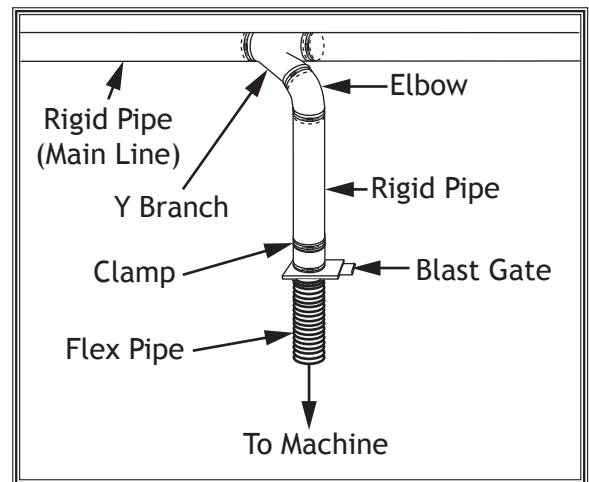
If both machines will never run at the same time, reference the machine with the biggest dust port in the table below and add blast gates after the Y-branch to open/close the line to each machine.

## Planning Drop Downs

Plan the drop downs for each machine, using blast gates wherever possible to control airflow (see **Figure 34**).

Total CFM	Branch Line Size
400	4"
500	4"
600	5"
700	5"
800	6"
900	6"
1000	6"

**Figure 33.** Sizing chart for multiple machines on the same branch line.



**Figure 34.** Example of drop down setup.

## Calculating Duct Resistance

Adding duct work, elbows, branches and any other components to a duct line increases airflow resistance (static pressure loss). This resistance can be minimized by using rigid (smooth) pipe and gradual curves, as opposed to flexible pipe and 90° elbows.

To help you think about this resistance, imagine riding a bicycle in a tunnel that is an exact replica of your duct work. If the inside of the tunnel is very bumpy (flexible pipe) and has a lot of sharp turns (90° elbows), it will take a lot more effort to travel from one end to the other.

The purpose of calculating the resistance is to determine if it is low enough from the machine to the dust collector to meet the given CFM requirement for the machine. Use the following tables to calculate the resistance of duct work.

Duct Dia.	Approximate Static Pressure Loss Per Foot of Rigid Pipe		Approximate Static Pressure Loss Per Foot of Flex Pipe	
	Main Lines at 3500 FPM	Branch Lines at 4000 FPM	Main Lines at 3500 FPM	Branch Lines at 4000 FPM
2"	0.091	0.122	0.35	0.453
2.5"	0.08	0.107	0.306	0.397
3"	0.071	0.094	0.271	0.352
4"	0.057	0.075	0.215	0.28
5"	0.046	0.059	0.172	0.225
6"	0.037	0.047	0.136	0.18
7"	0.029	0.036	0.106	0.141
8"	0.023	0.027	0.08	0.108
9"	0.017	0.019	0.057	0.079

Fitting Dia.	90° Elbow	45° Elbow	45° Wye(Y)	90° Wye(Y)
3"	0.47	0.235	0.282	0.188
4"	0.45	0.225	0.375	0.225
5"	0.531	0.266	0.354	0.236
6"	0.564	0.282	0.329	0.235
7"	0.468	0.234	0.324	0.216
8"	0.405	0.203	0.297	0.189

In most small/medium shops it is only necessary to calculate the line with the longest duct length or the most fittings (operating under the assumption that if the line with the highest resistance works, the others will be fine).

To calculate the static pressure of any given line in the system, follow these steps:

1. Make a list of each size duct in the line, including the length, and multiply those numbers by the static pressure value given in the previous table.
2. List each type of elbow or branch and multiply the quantity (if more than one) by the static pressure loss given in the previous table.
3. Add the additional factors from the table in **Figure 35** to your list.
4. Total your list (see **Figure 36** for an example) to come up with your overall static pressure loss number for that line.

**Note:** Always account for a seasoned filter, so you don't end up with a system that only works right when the filter is clean.

*Additionally, when calculating static pressure loss to determine if multiple lines can be left open at the same time, only include the main line numbers once.*

5. Compare the total static pressure loss for that line to the maximum static pressure loss found on the data sheet for your machine (located toward the front of this manual).
  - If the CFM for your static pressure loss is above the requirement of the machine, then the line will most likely be successful. Congratulations! You've just designed your own dust system. Compile a list of materials and refer to **Accessories** beginning on **Page 30**, to start buying the components necessary to make your system a reality.

Additional Factors	Static Pressure
Seasoned (well used) Dust Collection Filter	1"
Entry Loss at Large Machine Hood	2"

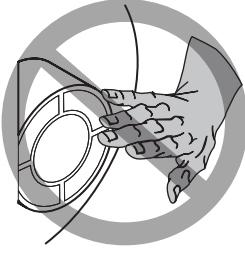
**Figure 35.** Additional factors affecting static pressure.

<b>Main Line</b>	
6" Rigid Pipe (.037) at 20' .....	0.740
<b>Branch Line</b>	
4" Rigid Pipe (.075) at 10' .....	0.750
4" Flex Pipe (.28) at 5' .....	1.400
<b>Elbows/Branches</b>	
6" 45° Y-Branch .....	0.329
4" 45° Elbow .....	0.225
<b>Additional Factors</b>	
Seasoned Filter .....	1.000
<b>Total Static Pressure Loss</b>	<b>4.444</b>

**Figure 36.** Totaling static pressure numbers.


—If the CFM for your static pressure loss is below the requirement of the machine, then that line will not effectively collect the dust. You must then modify some of the factors in that line to reduce the static pressure loss. Some of the ways to do this include 1) installing larger duct, 2) reducing amount of flexible duct used, 3) increasing machine dust port size, 4) moving machine closer to dust collector to eliminate duct length, and 5) reducing 90° elbows or replacing them with 45° elbows.

# OPERATIONS



**⚠ WARNING**

Do NOT put hands or small objects near inlet openings during operation. Objects sucked into the inlet will meet with the impeller blade. Failure to heed this warning could result in property damage or personal injury.




To reduce your risk of serious injury or damage to the machine, read this entire manual **BEFORE** using machine.

## General

Operating a dust collector is simple and straightforward. Turn the dust collector **ON**, then turn the dust producing machine **ON**. When you are finished with the machine operation, turn the machine **OFF**, then turn the dust collector **OFF**.

Blast gates can be used at the start of each branch line to control the air flow from the woodworking machine to the dust collector. If a machine is not being used, keep the blast gate closed to maintain higher levels of efficiency throughout the system.



To reduce the risk of eye injury and long-term respiratory damage, always wear safety glasses and a respirator while operating this machine.

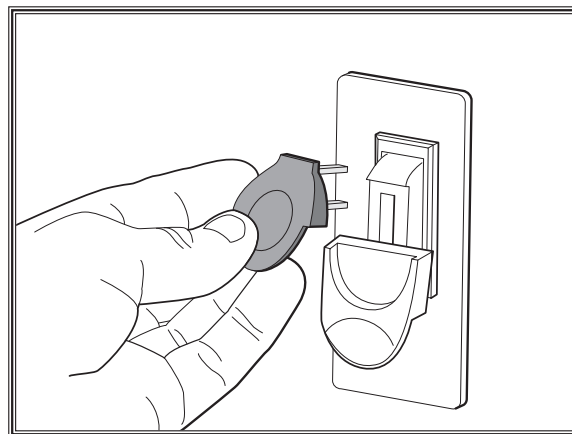
## Disabling Switch

The paddle ON/OFF switch can be disabled by removing the key, as shown in **Figure 37**. Disabling the switch in this manner can prevent unauthorized operation of the machine, which is important if it is not kept inside an access-restricted building or in a location where children may be present.

**IMPORTANT:** *Disabling the switch only restricts its function. It is not a substitute for disconnecting machine from power when adjusting or servicing.*

## Machine Storage

When the dust collector is not in use, unplug the power cord from the power source. Place the cord away from potential damage sources, such as high traffic areas, sharp objects, heat sources, harsh chemicals, water, damp areas, etc.



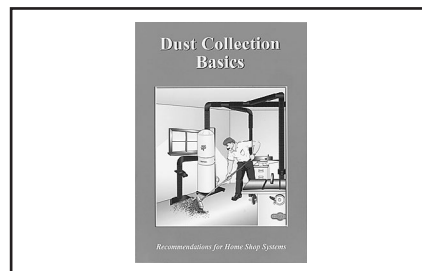
**Figure 37.** Disabling switch by removing key.



# ACCESSORIES

The following dust collector accessories may be available through your local Woodstock International Inc. Dealer. If you do not have a dealer in your area, these products are also available through online dealers. Please call or e-mail Woodstock International Inc. Customer Service to get a current listing of dealers at: 1-800-840-8420 or at [sales@woodstockint.com](mailto:sales@woodstockint.com).

The **Model W1050 Dust Collection Basics Handbook** skillfully guides you through all the necessary steps to design and construct an efficient dust collection system, including a bunch of tips for easy installation. With sixty pages of concise information, including photographs and illustrations, this handbook is a “must.”



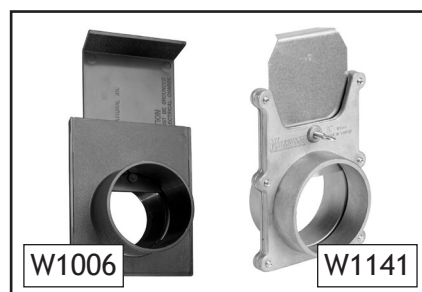
**Blast Gates** are available in both black ABS plastic and aluminum. Plastic blast gates are economically priced, have a textured surface and an easy sliding gate action. For those customers who prefer metal, our top quality aluminum blast gates feature a cast aluminum body with steel gate and locking knob. The following types and models are available:

## Black ABS Plastic Blast Gates

W1006 3" Outer Diameter  
W1007 4" Outer Diameter  
W1008 5" Outer Diameter  
W1009 6" Outer Diameter

## Aluminum Blast Gates

W1141 3" Outer Diameter  
W1142 4" Outer Diameter



The **Model W1053 Grounding Kit** provides everything you need to ground a dust collection system, including directions for installation. A large system may need more than one kit, so keep plenty of these on hand. This safety accessory is essential to any complete dust collection assortment.



The **Model W1055 Dust Collection Accessories Kit #2** provides the necessary hoses, clamps, hoods and fittings to connect two woodworking machines to a dust collector. Air flow to each machine is controlled by a blast gate. The kit comes complete with comprehensive instructions and can be expanded even further using our other dust collection accessories (list enclosed in each box).

## Kit includes:

- (2) 4" Blast gates (W1007)
- (2) 4" x 10' Hose (W1031)
- (1) Table saw dust hood (W1004)
- (1) Universal dust hood (W1010)
- (1) 4" Y-fitting (W1015)
- (10) 4" Wire hose clamps (W1317)
- Shipping weight: 15 lbs. 14 oz.
- Package size: 24" x 24" x 12"





**Y-Fittings** are used to attach branch lines to service more than one machine. This design provides increased lateral air flow and efficiency over other types of fittings.

W1014: 3" Outer Diameter

W1015: 4" Outer Diameter



**Splices** are used to connect full sections of hose for longer runs or to utilize short sections.

W1018: 3" Outer Diameter

W1019: 4" Outer Diameter



**Reducers** provide a step down from a larger main line to smaller branch lines. This step-down increases air velocity near the machine where it's needed most. These three size reductions will handle most system needs.

W1020: 3" x 2" Outer Diameter

W1011: 4" x 3" Outer Diameter

W1037: 5" x 4" Outer Diameter



**T-fittings** provide the option of adding branches to a system to service each machine in a shop. T's are very helpful when space or design constraints prohibit the use of Y's.

W1012: 3" Outer Diameter

W1013: 4" Outer Diameter.



Woodstock International hoses are ideally suited for dust removal because of their strength, durability, and flexibility. Available in the most requested sizes and priced to move! The following types and models are available:

**Wire-Reinforced  
Clear Hose**

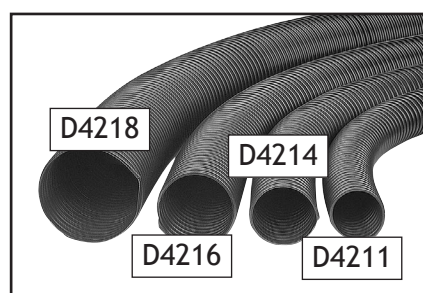
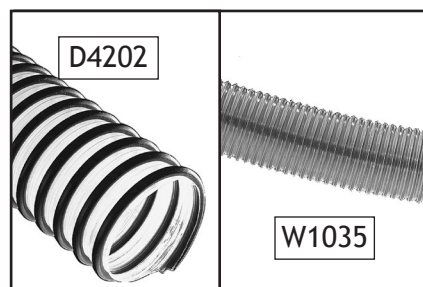
W1034 4" x 10'  
W1035 5" x 10'  
W1036 6" x 10'  
D3887 7" x 3'  
D3888 7" x 10'  
D3889 8" x 3'  
D3890 8" x 10'  
D3891 9" x 2'  
D3892 9" x 10'

**Clear Dust  
Collection Hose**

D4202 2" x 10'  
D4203 2½" x 10'  
D4204 3" x 10'  
D4205 3" x 20'  
D4206 4" x 10'  
D4207 4" x 20'  
D4198 4" x 50'  
D4208 5" x 10'

**Black Dust  
Collection Hose**

D4211 2" x 10'  
D4212 2½" x 10'  
D4213 3" x 10'  
D4214 3" x 20'  
D4215 3" x 50'  
D4216 4" x 10'  
D4217 4" x 20'  
D4218 5" x 10'



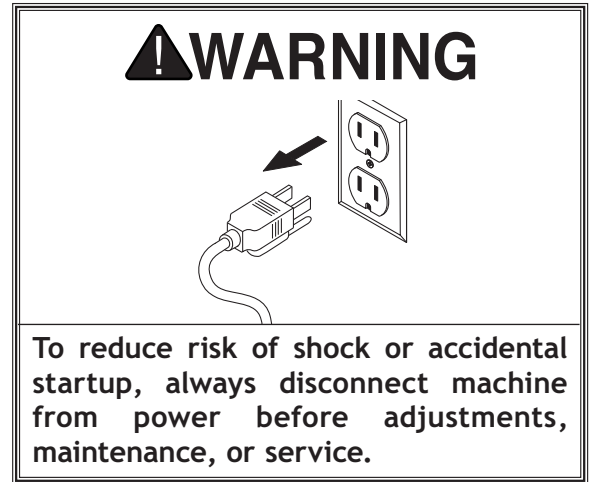
# MAINTENANCE

## General

Regular periodic maintenance on your machine will ensure its optimum performance. Make a habit of inspecting your machine each time you use it.

Check for the following conditions and repair or replace when necessary:

- Loose mounting bolts.
- Worn switch.
- Worn or damaged cords and plugs.
- Almost full collection bag.
- Any other condition that could hamper the safe operation of this machine.



## Lubrication

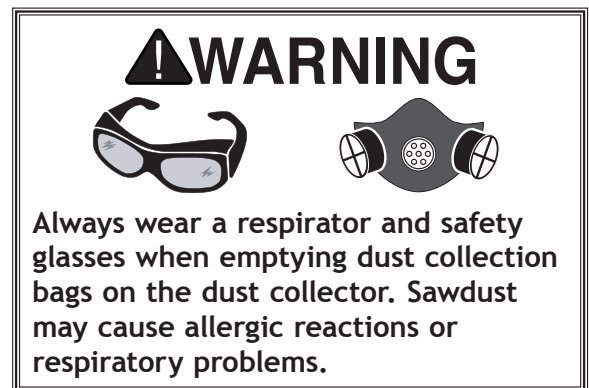
Since all bearings are shielded and permanently lubricated, simply leave them alone until they need to be replaced. Do not lubricate them.

## Bag Cleaning

Always empty the collection bags on a regular basis. Emptying the collection bags allows the machine to operate at a much higher level of efficiency.

Always wear the appropriate respirator or dust mask and safety glasses when emptying the collection bags. Small dust particles can escape the bags during emptying, causing them to become airborne and easily inhaled. This microscopic airborne dust is extremely unhealthy to breathe and can cause serious health problems.

While the Model W1666/W1685 excels at collecting the majority of wood dust produced by your machines, it is not an air filter; therefore, we strongly recommend the supplemental aid of a shop air filter such as the Woodstock Model W1690. Air filters are designed to collect the smaller dust particles in the air that escape from the dust collector bag.



## Replacing Bags

The lower bags should be emptied when they become  $\frac{2}{3}$  to  $\frac{3}{4}$  full.

To empty the dust collection bags, do these steps:

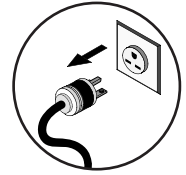
1. DISCONNECT MACHINE FROM POWER!
2. Make sure you are wearing safety glasses and a respirator.
3. Release the quick release clamp securing each collection bag, then remove the bags from the collector, as shown in **Figure 38**.
4. Place a garbage bag over each bag, invert the bag, and shake the dust out.
5. Dispose of the dust and re-install the bags with the clamps.



**Figure 38.** Replacing lower bag.

# SERVICE

## Troubleshooting



This section covers the most common problems and corrections with this type of machine. **WARNING! DO NOT** make any adjustments until power is disconnected and moving parts have come to a complete stop!

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
Machine does not start or a breaker trips.	<ol style="list-style-type: none"> <li>1. Switch disabling key removed.</li> <li>2. Power supply switched OFF or is at fault.</li> <li>3. Wall fuse/circuit breaker is blown/tripped.</li> <li>4. Wiring is open/has high resistance.</li> <li>5. Motor ON button or ON/OFF switch is at fault.</li> <li>6. Motor is at fault.</li> </ol>	<ol style="list-style-type: none"> <li>1. Install switch disabling key.</li> <li>2. Ensure power supply is switched on; ensure power supply has the correct voltage.</li> <li>3. Ensure circuit size is suitable for this machine; replace weak breaker.</li> <li>4. Check for broken wires or disconnected/corroded connections, and repair/replace as necessary.</li> <li>5. Replace faulty ON button or ON/OFF switch.</li> <li>6. Test/repair/replace.</li> </ol>
Machine has vibration or noisy operation.	<ol style="list-style-type: none"> <li>1. Motor, motor mount, or other mounting component is loose or broken.</li> <li>2. Motor fan is rubbing on fan cover.</li> <li>3. Impeller is loose or damaged and unbalanced.</li> <li>4. Motor bearings are at fault.</li> </ol>	<ol style="list-style-type: none"> <li>1. Retighten. Use thread locking fluid if necessary. Replace stripped fasteners or damaged components if necessary.</li> <li>2. Replace dented fan cover; replace loose/damaged fan.</li> <li>3. Disconnect dust collector from power, and inspect the impeller for dents, bends, loose fins. Replace the motor and impeller as a set if the motor shaft and the impeller hub are damaged.</li> <li>4. Test by rotating shaft; rotational grinding/loose shaft requires bearing replacement.</li> </ol>
Dust collector does not adequately collect dust or chips; poor performance.	<ol style="list-style-type: none"> <li>1. Dust collection bag is full.</li> <li>2. Restriction in duct line.</li> <li>3. Dust collector is too far away, or there are too many sharp bends in the ducting.</li> <li>4. Lumber is wet and dust not flowing through ducting smoothly.</li> <li>5. Leaks in ducting or too many open ports.</li> <li>6. Not enough open branch lines, causing a velocity drop in the main line.</li> <li>7. Ducting or machine dust ports are incorrectly sized.</li> <li>8. The machine dust collection design is inadequate.</li> <li>9. The dust collector is too small for the dust collection system, or ducting layout design is inadequate.</li> </ol>	<ol style="list-style-type: none"> <li>1. Empty collection bag.</li> <li>2. Remove restriction in the duct line. A plumbing snake may be necessary.</li> <li>3. Relocate the dust collector closer to the point of suction, and rework ducting without sharp bends. Refer to System Design, beginning on <b>Page 23</b>.</li> <li>4. Process lumber with less than 20% moisture content.</li> <li>5. Rework the ducting to eliminate all leaks. Close dust ports for lines not being used.</li> <li>6. Open 1 or 2 more blast gates to different branch lines to allow the velocity in the main line to increase.</li> <li>7. Re-install correctly sized ducts and fittings. Refer to System Design beginning on <b>Page 23</b> for more solutions.</li> <li>8. Use a dust collection nozzle on a stand.</li> <li>9. Install a larger dust collector to power your dust collection system.</li> </ol>
Sawdust being blown into the air from the dust collector.	<ol style="list-style-type: none"> <li>1. Duct clamps or dust collection bag are not properly clamped and secured.</li> <li>2. Bag clamp is loose or damaged.</li> </ol>	<ol style="list-style-type: none"> <li>1. Resecure ducts and dust collection bag, making sure duct and bag clamps are tight and completely over the ducts and bags.</li> <li>2. Retighten bag clamp.</li> </ol>

# Electrical Safety Instructions

These pages are current at the time of printing. However, in the spirit of improvement, we may make changes to the electrical systems of future machines. Study this diagram carefully. If you notice differences between your machine and these wiring diagrams, call Woodstock International Technical Support at (360) 734-3482.

## ⚠ WARNING

**SHOCK HAZARD.** Working on wiring that is connected to a power source is extremely dangerous. Touching electrified parts will result in personal injury including but not limited to severe burns, electrocution, or death. Disconnect the power from the machine before servicing electrical components!

**QUALIFIED ELECTRICIAN.** Due to the inherent hazards of electricity, only a qualified electrician should perform wiring tasks on this machine. If you are not a qualified electrician, get help from one before attempting any kind of wiring job.

**WIRE CONNECTIONS.** All connections must be tight to prevent wires from loosening during machine operation. Double-check all wires disconnected or connected during any wiring task to ensure tight connections.

**WIRE/COMPONENT DAMAGE.** Damaged wires or components increase the risk of serious personal injury, fire, or machine damage. If you notice that any wires or components are damaged while performing a wiring task, replace those wires or components before completing the task.

**MOTOR WIRING.** The motor wiring shown in these diagrams is current at the time of printing, but it may not match your machine. Always use the wiring diagram inside the motor junction box.

**MODIFICATIONS.** Using aftermarket parts or modifying the wiring beyond what is shown in the diagram may lead to unpredictable results, including serious injury or fire.

**CAPACITORS/INVERTERS.** Some capacitors and power inverters store an electrical charge for up to five minutes after being disconnected from the power source. To avoid being shocked, wait at least this long before working on these components.

**ELECTRICAL REQUIREMENTS.** You **MUST** follow the electrical requirements at the beginning of this manual when connecting your machine to a power source.

**EXPERIENCING DIFFICULTIES.** If you are experiencing difficulties understanding the information included in this section, contact our Technical Support at (360) 734-3482.

### NOTICE

The photos and diagrams included in this section are best viewed in color. You can view these pages in color at [www.shopfox.biz](http://www.shopfox.biz).

### WIRING DIAGRAM COLOR KEY

BLACK — Bk	BLUE — Bl	YELLOW — Yl	LIGHT BLUE — Lb
WHITE — Wt	BROWN — Br	YELLOW GREEN — Yg	BLUE WHITE — Bw
GREEN — Gn	GRAY — Gy	PURPLE — Pu	TUR-QUOISE — Tu
RED — Rd	ORANGE — Or	PINK — Pk	



# Wiring Diagrams

## W1666 Wiring

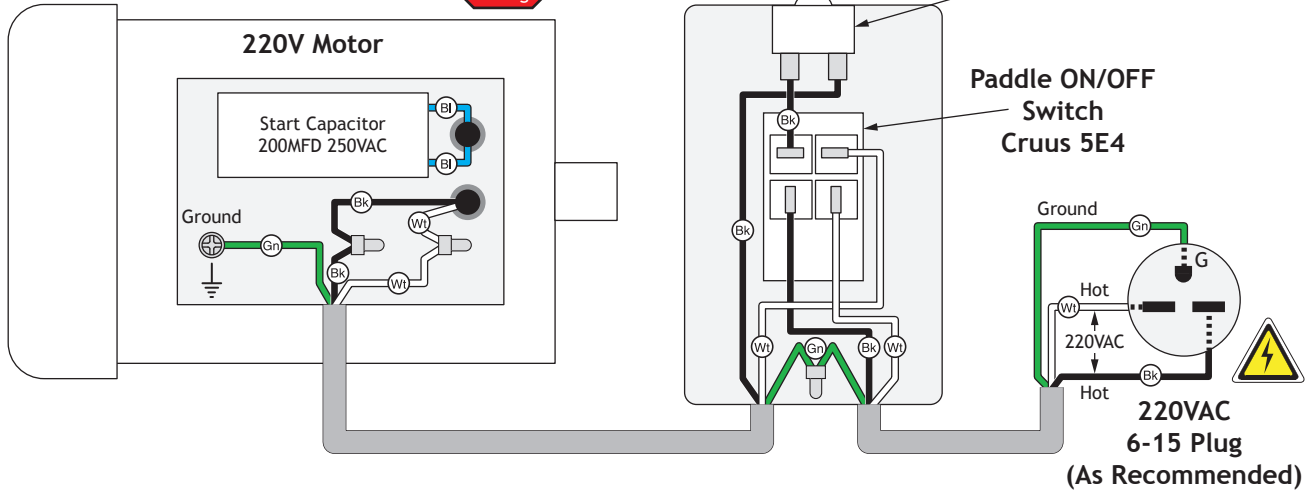


Figure 39. Motor wiring.

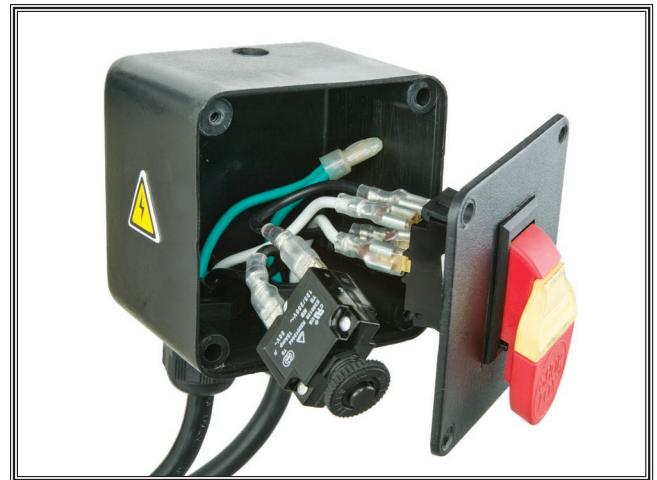
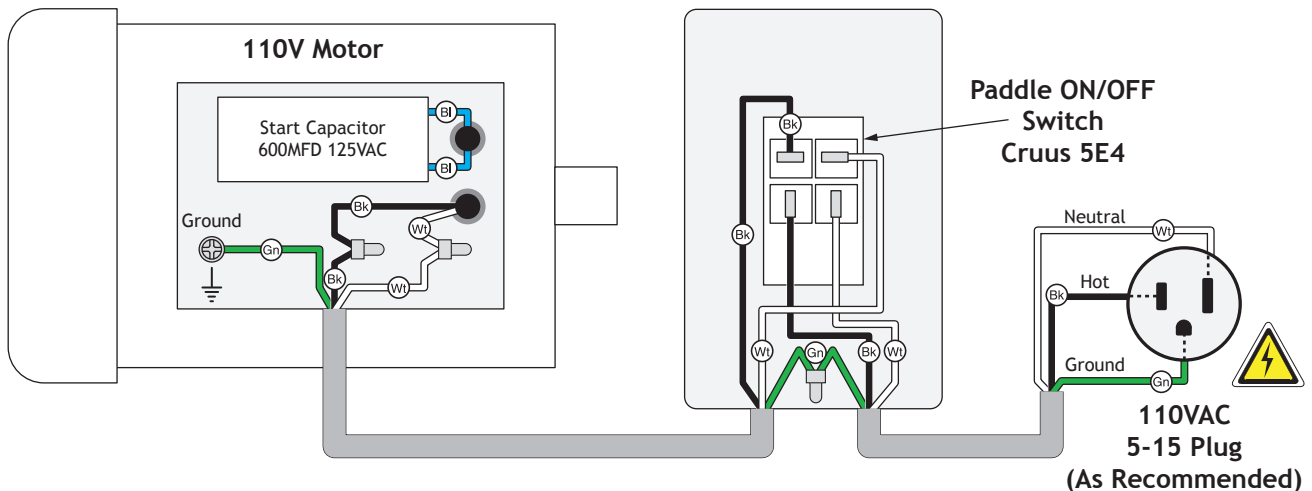


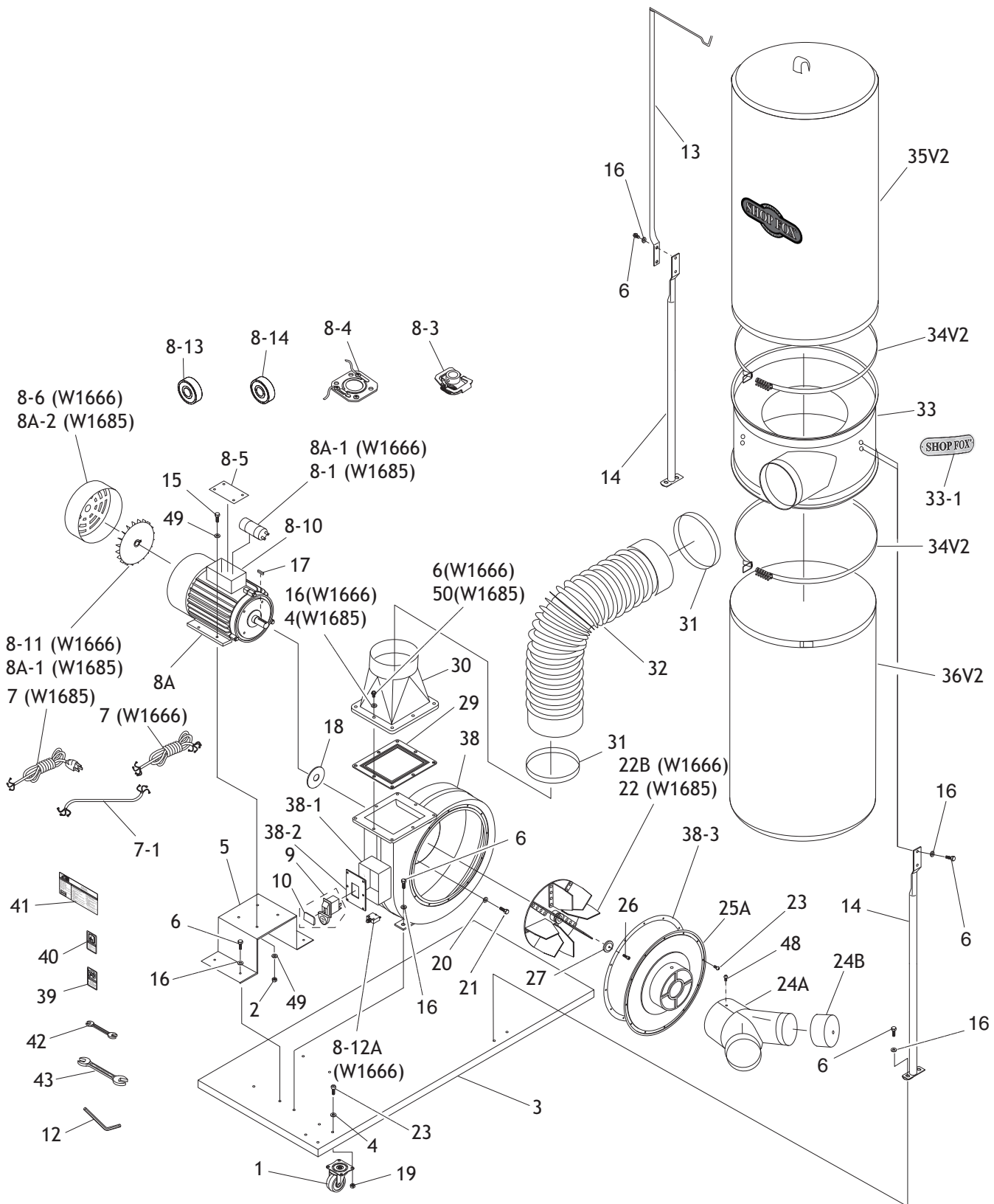
Figure 40. Switch wiring.

## W1685 Wiring



# PARTS

## Main



# Main Parts List

REF	PART #	DESCRIPTION
1	X1666001	SWIVEL CASTER
2	X1666002	HEX NUT M8-1.25
3	X1666003	BASE PLATE
4	X1666004	FLAT WASHER 6MM
5	X1666005	MOTOR MOUNT
6	X1666006	HEX BOLT M8-1.25 X 16
7	X1666007	POWER CORD 14G 3W 120" (W1666)
7	X1685007	POWER CORD 14G 3W 72" 5-15 (W1685)
7-1	X1666007-1	MOTOR CORD 14G 3W 24"
8-12A	X1666008-12A	OVERLOAD SWITCH CRUUS 15A (W1666)
9	X1666009	SHOP FOX PADDLE SWITCH 110V W/KEY
10	X1666010	PADDLE SWITCH KEY
12	X1666012	HEX WRENCH 5MM
13	X1666013	UPPER BAG HANGER
14	X1666014	SEPARATOR SUPPORT
15	X1666015	HEX BOLT M8-1.25 X 25
16	X1666016	FLAT WASHER 8MM
17	X1666017	KEY 5 X 5 X 25
18	X1666018	MOTOR SHAFT SPACER
19	X1666019	HEX NUT M6-1
20	X1666020	LOCK WASHER 10MM
21	X1666021	HEX BOLT M10-1.5 X 16
22B	X1666022B	IMPELLER (W1666)
22	X1685022	IMPELLER (W1685)
23	X1666023	PHLP HD SCR M6-1 X 10
24A	X1666024A	INLET Y-CONNECTOR 6" X (2)4" V2.12.01
24B	X1666024B	INLET Y-CONNECTOR CAP
25A	X1666025A	IMPELLER COVER 6" V2.12.01

REF	PART #	DESCRIPTION
26	X1666026	CAP SCREW M6-1 X 20 LH
27	X1666027	ARBOR WASHER (BLACK PLASTIC)
29	X1666029	OUTLET GASKET 8 HOLE (W1666)
29	X1685029	OUTLET GASKET 8 HOLE (W1685)
30	X1666030	OUTLET FLANGE 8 HOLE (W1666)
30	X1685030	OUTLET FLANGE 8 HOLE (W1685)
31	X1666031	HOSE CLAMP 5"
32	X1666032	TRANSFER HOSE 5"
33	X1666033	SEPARATOR
33-1	X1666033-1	CURVED SHOP FOX NAME PLATE
34V2	X1666034V2	BAG CLAMP POLYPROPYLENE V2.07.10
35V2	X1666035V2	UPPER BAG 2.5 MICRON V2.02.15
36V2	X1666036V2	LOWER BAG (PLASTIC) V2.02.15
38	X1666038	IMPELLER HOUSING (W1666)
38	X1685038	IMPELLER HOUSING (W1685)
38-1	X1666038-1	SWITCH BOX
38-2	X1666038-2	SWITCH BOX COVER
38-3	X1666038-3	IMPELLER COVER GASKET
39	X1666039	HAND/INLET WARNING LABEL
40	X1666040	READ MANUAL LABEL
41	X1666041	MACHINE ID LABEL (W1666)
41	X1685041	MACHINE ID LABEL (W1685)
42	X1666042	WRENCH 8 X 10MM OPEN-ENDS
43	X1666043	WRENCH 11 X 13MM OPEN-ENDS
48	X1666048	PHLP HD SCR M5-.8 X 10
49	X1666049	FLAT WASHER 8MM
50	X1685050	HEX BOLT M6-1 X 20

## W1666 2 HP, 220V, Single-Phase Motor

REF	PART #	DESCRIPTION
8A	X1666008A	MOTOR 2HP 220V 1-PH V2.11.02
8-3	X1666008-3	CENTRIFUGAL SWITCH
8-4	X1666008-4	CONTACT PLATE
8-5	X1666008-5	MOTOR BOX COVER
8-6	X1666008-6	MOTOR FAN COVER
8-10	X1666008-10	WIRING BOX WITHOUT COVER
8-11	X1666008-11	MOTOR FAN
8A-1	X1666008A-1	S CAPACITOR 200M 250V
8-13	X1666008-13	MOTOR FRONT BEARING
8-14	X1666008-14	MOTOR REAR BEARING

## W1685 1-1/2 HP, 110V, Single-Phase Motor

REF	PART #	DESCRIPTION
8A	X1685008A	MOTOR 1-1/2HP 110V 1-PH V2.11.02
8-3	X1685008-3	CENTRIFUGAL SWITCH
8-4	X1685008-4	CONTACT PLATE
8-5	X1685008-5	MOTOR BOX COVER
8A-2	X1685008A-2	MOTOR FAN COVER
8-10	X1685008-10	WIRING BOX WITHOUT COVER
8A-1	X1685008A-1	MOTOR FAN
8-1	X1685008-1	S CAPACITOR 600M 125V
8-13	X1685008-13	MOTOR FRONT BEARING
8-14	X1685008-14	MOTOR REAR BEARING





# Warranty Registration

Name \_\_\_\_\_  
 Street \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
 Phone # \_\_\_\_\_ Email \_\_\_\_\_ Invoice # \_\_\_\_\_  
 Model # \_\_\_\_\_ Serial # \_\_\_\_\_ Dealer Name \_\_\_\_\_ Purchase Date \_\_\_\_\_

*The following information is given on a voluntary basis. It will be used for marketing purposes to help us develop better products and services. Of course, all information is strictly confidential.*

1. How did you learn about us?  
     \_\_\_\_\_ Advertisement                      \_\_\_\_\_ Friend                      \_\_\_\_\_ Local Store  
     \_\_\_\_\_ Mail Order Catalog              \_\_\_\_\_ Website                      \_\_\_\_\_ Other:
2. How long have you been a woodworker/metalworker?  
     \_\_\_\_\_ 0-2 Years                      \_\_\_\_\_ 2-8 Years                      \_\_\_\_\_ 8-20 Years                      \_\_\_\_\_ 20+ Years
3. How many of your machines or tools are Shop Fox?  
     \_\_\_\_\_ 0-2                      \_\_\_\_\_ 3-5                      \_\_\_\_\_ 6-9                      \_\_\_\_\_ 10+
4. Do you think your machine represents a good value?              \_\_\_\_\_ Yes                      \_\_\_\_\_ No
5. Would you recommend Shop Fox products to a friend?              \_\_\_\_\_ Yes                      \_\_\_\_\_ No
6. What is your age group?  
     \_\_\_\_\_ 20-29                      \_\_\_\_\_ 30-39                      \_\_\_\_\_ 40-49  
     \_\_\_\_\_ 50-59                      \_\_\_\_\_ 60-69                      \_\_\_\_\_ 70+
7. What is your annual household income?  
     \_\_\_\_\_ \$20,000-\$29,000                      \_\_\_\_\_ \$30,000-\$39,000                      \_\_\_\_\_ \$40,000-\$49,000  
     \_\_\_\_\_ \$50,000-\$59,000                      \_\_\_\_\_ \$60,000-\$69,000                      \_\_\_\_\_ \$70,000+
8. Which of the following magazines do you subscribe to?  

_____ Cabinet Maker	_____ Popular Mechanics	_____ Today's Homeowner
_____ Family Handyman	_____ Popular Science	_____ Wood
_____ Hand Loader	_____ Popular Woodworking	_____ Wooden Boat
_____ Handy	_____ Practical Homeowner	_____ Woodshop News
_____ Home Shop Machinist	_____ Precision Shooter	_____ Woodsmith
_____ Journal of Light Cont.	_____ Projects in Metal	_____ Woodwork
_____ Live Steam	_____ RC Modeler	_____ Woodworker West
_____ Model Airplane News	_____ Rifle	_____ Woodworker's Journal
_____ Modeltec	_____ Shop Notes	_____ Other:
_____ Old House Journal	_____ Shotgun News	

9. Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

CUT ALONG DOTTED LINE

FOLD ALONG DOTTED LINE



Place  
Stamp  
Here



WOODSTOCK INTERNATIONAL INC.  
P.O. BOX 2309  
BELLINGHAM, WA 98227-2309



FOLD ALONG DOTTED LINE

TAPE ALONG EDGES--PLEASE DO NOT STAPLE

# WARRANTY

Woodstock International, Inc. warrants all Shop Fox machinery to be free of defects from workmanship and materials for a period of two years from the date of original purchase by the original owner. This warranty does not apply to defects due directly or indirectly to misuse, abuse, negligence or accidents, lack of maintenance, or reimbursement of third party expenses incurred.

Woodstock International, Inc. will repair, replace, or arrange for a dealer refund at its expense and at its option, the Shop Fox machine or machine part, which in proper and intended use has proven to be defective, provided that the original owner returns the product prepaid to an authorized warranty or repair facility as designated by our Bellingham, Washington office with proof of their purchase of the product within two years, and provides Woodstock International, Inc. reasonable opportunity to verify the alleged defect through inspection. If it is determined there is no defect, or that the defect resulted from causes not within the scope of Woodstock International Inc.'s warranty, then the original owner must bear the cost of storing and returning the product.

This is Woodstock International, Inc.'s sole written warranty and any and all warranties that may be implied by law, including any merchantability or fitness, for any particular purpose, are hereby limited to the duration of this written warranty. We do not warrant that Shop Fox machinery complies with the provisions of any law, acts or electrical codes. We do not reimburse for third party repairs. In no event shall Woodstock International, Inc.'s liability under this limited warranty exceed the purchase price paid for the product, and any legal actions brought against Woodstock International, Inc. shall be tried in the State of Washington, County of Whatcom. We shall in no event be liable for death, injuries to persons or property or for incidental, contingent, special or consequential damages arising from the use of our products.

Every effort has been made to ensure that all Shop Fox machinery meets high quality and durability



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